Claims.

1. Compressor containing a compressor element (1) which is provided with a rotor chamber (2) onto which are connected an inlet pipe (3) and an outlet pipe (4); a reservoir (7) in the outlet pipe (4); a pressure regulating system (8) comprising an inlet valve (9) erected in the inlet pipe (3); a piston (23) which is connected to the inlet valve (9) and which can be moved in a cylinder (24); a bridge (14) bridging said inlet valve (9) and in which, between the inlet pipe (3) and the rotor chamber (2), are successively erected a gas stream limiter (15) and a non-return valve (16) which only admits gas into the rotor chamber (2); a gas pipe (17) connecting the reservoir (7) to the part of the bridge (14) situated between the gas stream limiter (15) and the non-return valve (16); and a relief valve (18) erected in said gas pipe (17), characterized in that the piston (23) is a double-acting piston which divides the cylinder (24) in two closed cylinder chambers (25,26); in that the cylinder chamber (25), on the side turned away from the inlet valve, is connected to a part (13) of the rotor chamber (2) situated near the inlet valve (9) via a pipe (28); and in that, on the other side of the piston (23), the cylinder chamber (26) is connected to a part (13) of the rotor chamber (2) situated near the inlet valve (9) and to the non-return valve (16) via a pipe (29).

2. Compressor according to claim 1, characterised in that the pipe (28) connecting the cylinder chamber (25) on the side which is turned away from the inlet valve (9) to a part (13) of the rotor chamber (2) situated near the inlet valve (9) as such forms the connection (27) between the piston (23) and the inlet valve (9).

3. Compressor according to claim 2, characterised in that the connection between the piston (23) and the inlet valve (9) consists of a stem (27) provided with a duct (34) over its entire length.

4. Compressor according to any of the preceding claims, characterised in that the relief valve (18) is a pneumatic valve which is equipped with a spring (21) and which is connected by a pipe (22) which is directly connected to the reservoir (7) and a control line (20) which is also connected to said reservoir (7) via a control valve (19).

5. Compressor according to claim 4, characterised in that the control valve (19) is an electromagnetic valve.

6. Compressor according to any of the preceding claims, characterised in that the inlet valve (9) has a housing (12) forming a common housing (30) with the cylinder (24).